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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,821	03/11/2004	Victor G. Hoover	34086US	7120

7590 07/14/2005

RICHMOND, HITCHCOCK, FISH & DOLLAR
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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,821

Applicant(s)

HOOVER ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-96 is/are pending in the application.
- 4a) Of the above claim(s) 48-96 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/11/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-47 in the reply filed on June 20, 2005 is acknowledged. The traversal is on the ground(s) that the apparatus and process are sufficiently closely related to be allowable in a single application. This is not found persuasive because applicants have not shown that the alternative use proposed by the examiner for the apparatus is not feasible.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Claim 20 is objected to because of the following informalities: Claim 20 is objected to because a word appears to be missing after the word "positioned" in the last line of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 7, 17, 25, and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Tate et al. (US 2,873,248).

The Tate reference discloses an apparatus that comprises a fluidized bed reactor, a fluidized bed regenerator, and a fluidized bed reducer that is close-coupled to the reactor. There is a straight, open passageway between the reducer and reactor. A stripper is also close coupled to the reactor and is connected to the reactor by a straight, open passageway. The apparatus contains transport assemblies for transporting solids from the reactor to the regenerator, for transporting solids from the regenerator to the reducer, and for transporting solids from the reducer to the reactor. While the apparatus is not disclosed as a desulfurization apparatus, the apparatus of Tate is capable of being used as a desulfurization unit. See column 2, line 53 through column 4, line 14.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 5, 8-11, 18, 19, 26-28, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tate et al. (US 2,873,248).

The Tate reference discloses an apparatus that comprises a fluidized bed reactor, a fluidized bed regenerator, and a fluidized bed reducer that is close-coupled to the reactor. There is a straight, open passageway between the reducer and reactor. A stripper is also close coupled to the reactor and is connected to the reactor by a straight, open passageway. The apparatus contains transport assemblies for transporting solids from the reactor to the regenerator, for transporting solids from the regenerator to the reducer, and for transporting solids from the reducer to the reactor. While the apparatus is not disclosed as a desulfurization apparatus, the apparatus of Tate is capable of being used as a desulfurization unit. See column 2, line 53 through column 4, line 14.

The Tate reference does not disclose that the reducer solids outlet and the reactor solids inlet are spaced less than about 3.0 m from one another, does not disclose that the reactor solids outlet and stripper solids inlet are spaced less than about 3.0 m from one another, and does not disclose the claimed characteristics of the passageway between the reactor and stripper or the passageway between the reducer and reactor. The Tate reference also does not disclose the relative locations of the vessels, the inlets, the outlets, etc.

It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to have modified the apparatus of Tate by spacing, sizing, and orienting the apparatus including the inlets and outlets as claimed because one would adjust such features based on space availability and desired capacity.

Claims 3, 12-16, 20-24, and 34-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tate et al. (US 2,873,248) as applied to claims 1, 6, and 25 above, and further in view of Thompson et al. (US 2003/0192811 A1).

As discussed above, the Tate reference does not disclose an apparatus that includes a regenerator receiver and lock hoppers.

The Thompson reference discloses that receivers and lock hoppers are conventionally used in processes that involve the transporting of particulates from one vessel to another. See paragraphs [0050] and [0051].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Tate by utilizing receivers and lock hoppers as suggested by Thompson because such units are conventionally used and permit the transporting of particles from one environment to another.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses apparatus that contain reducers and processes that result in desulfurization.

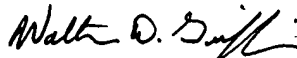
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447.

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The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
July 8, 2005